

Master in Artificial Intelligence



Algorithm Selection & Development I





Purpose

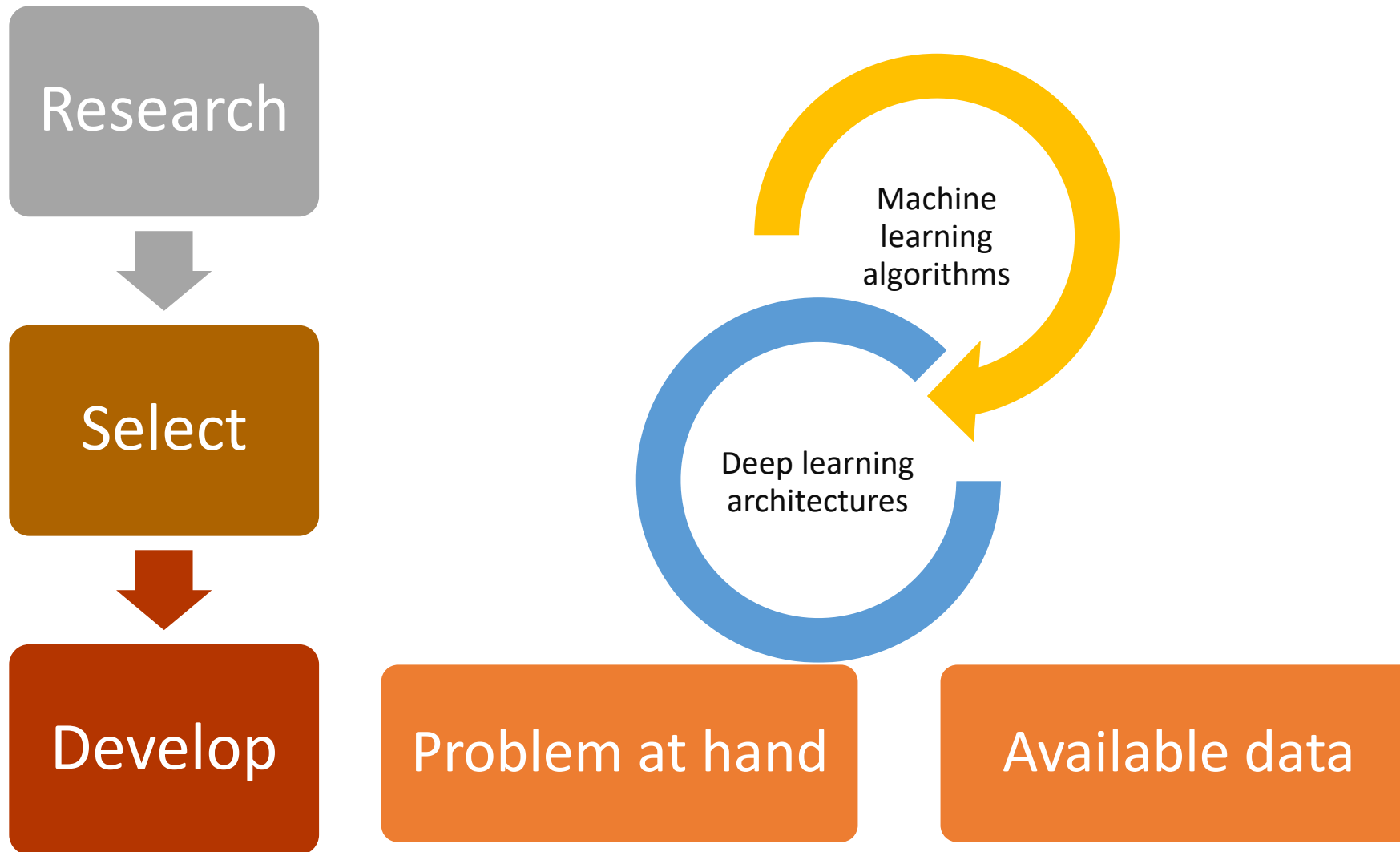
The purpose of the section is to help you learn how to research, select, and develop appropriate algorithms to become a Successful Artificial Intelligence (AI) Engineer

At the end of this lecture, you will learn the following

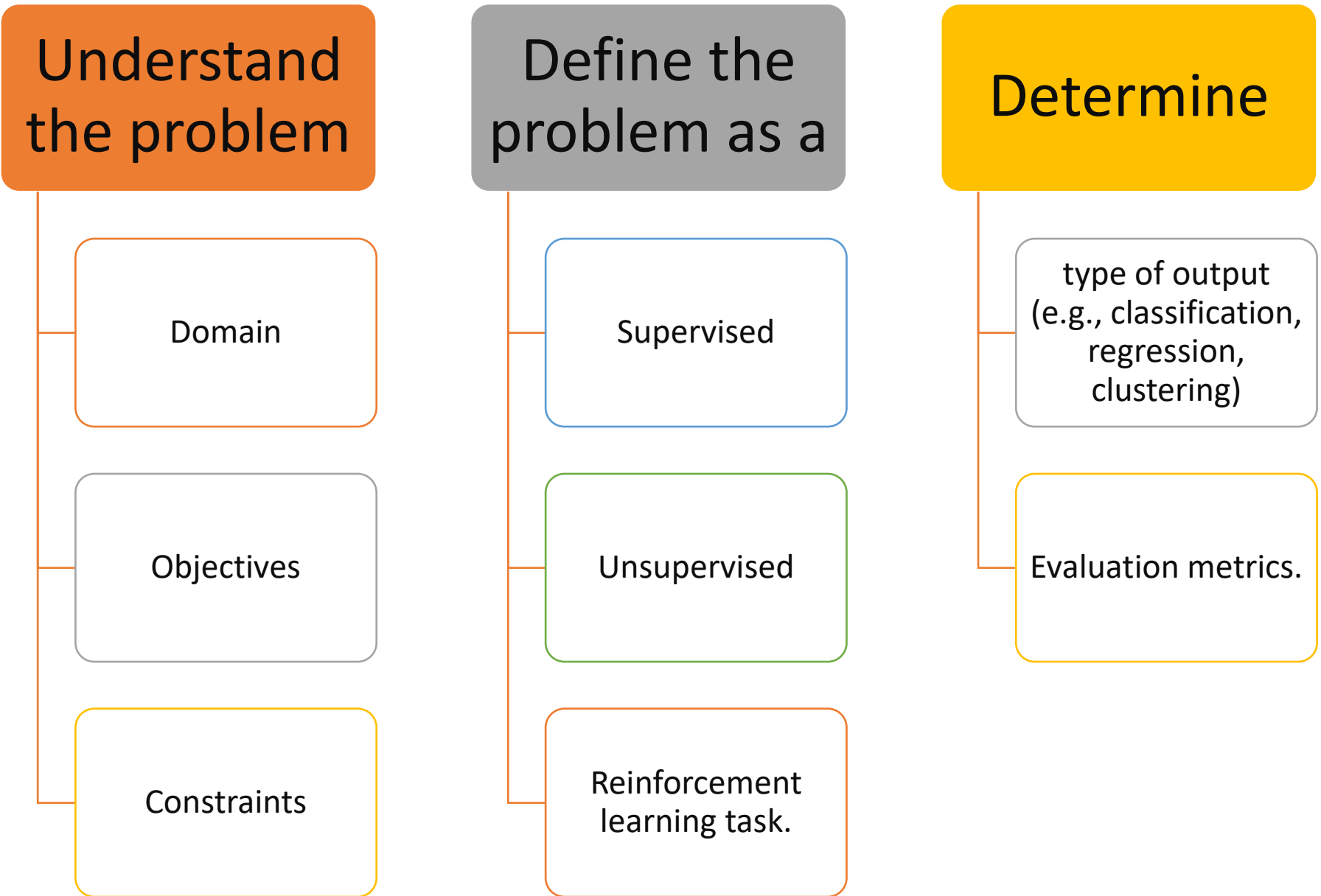
- **How to research, select, and develop appropriate machine learning algorithms or deep learning architectures based on the problem at hand and the available data?**



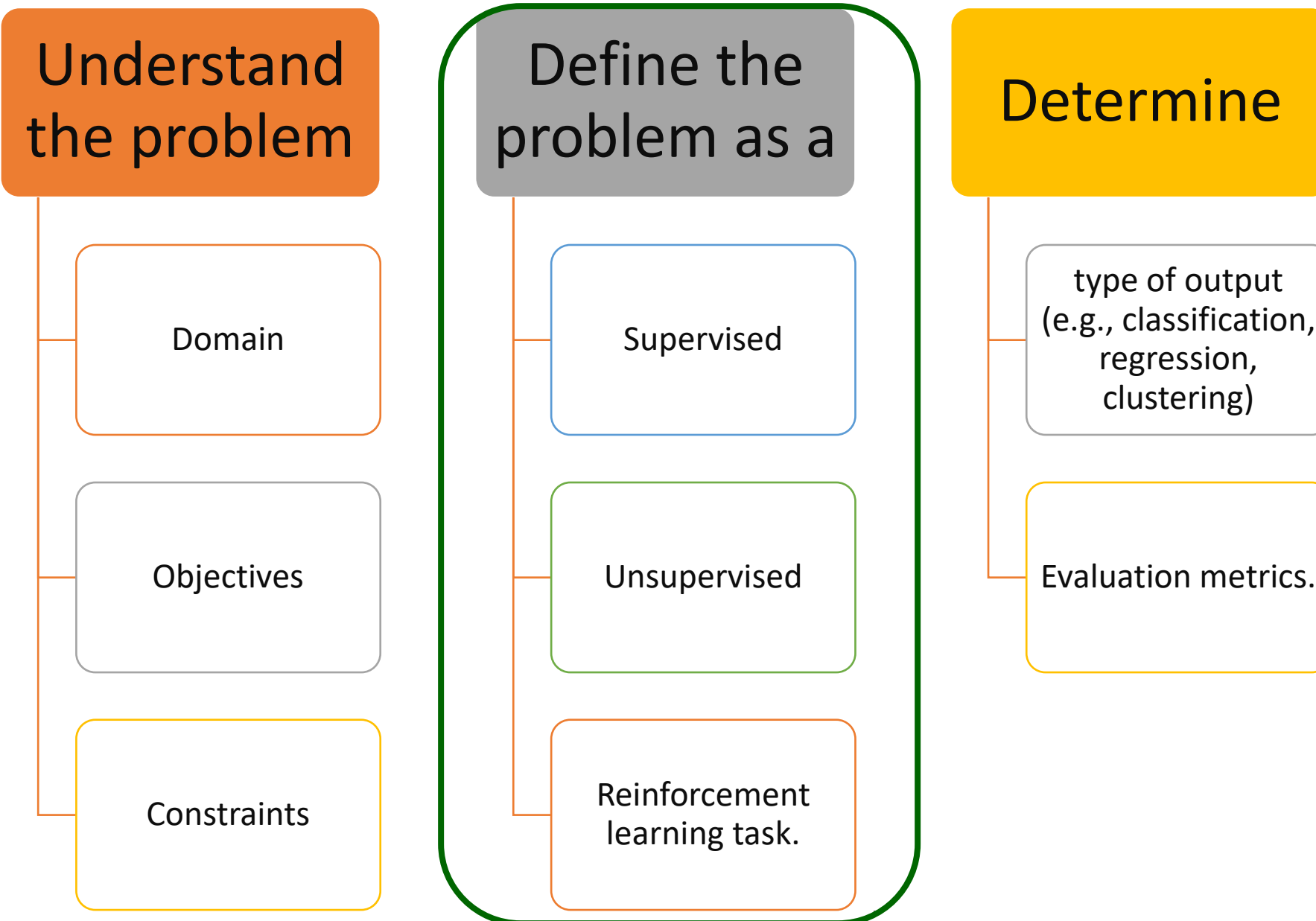
How to research, select, and develop appropriate algorithms

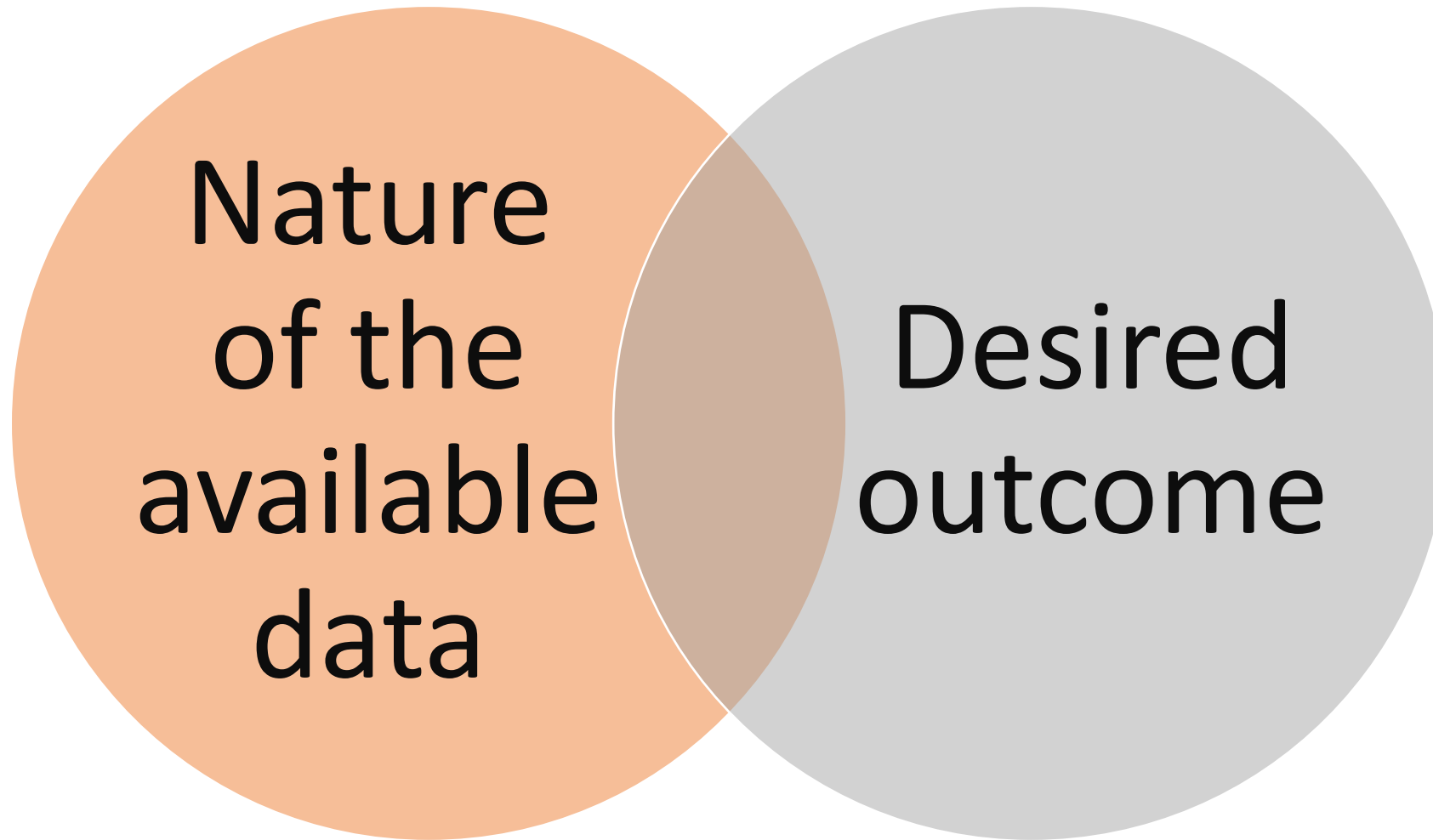


Problem Understanding and Formulation



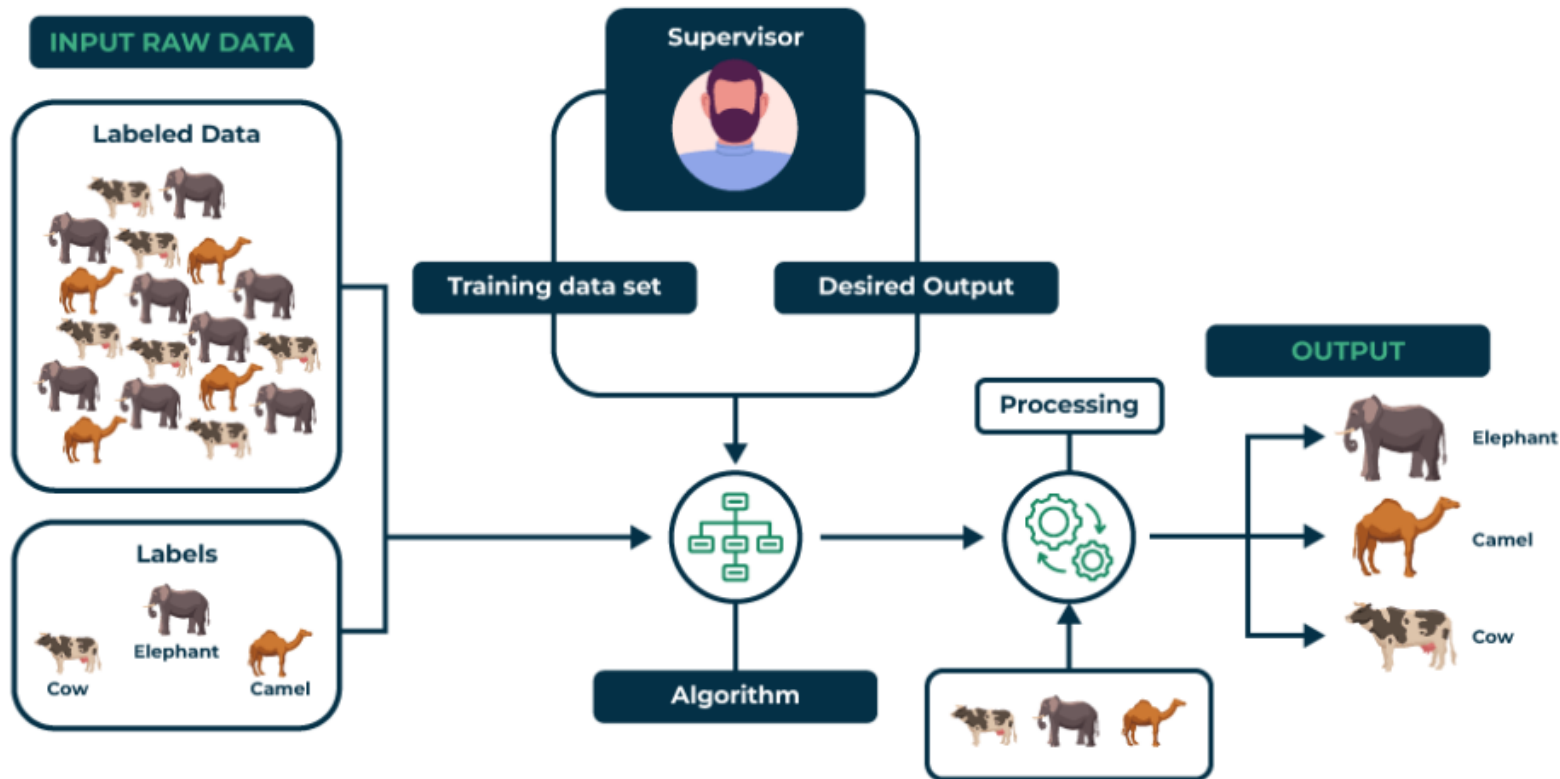
How to define the problem as a supervised, unsupervised, or reinforcement learning task





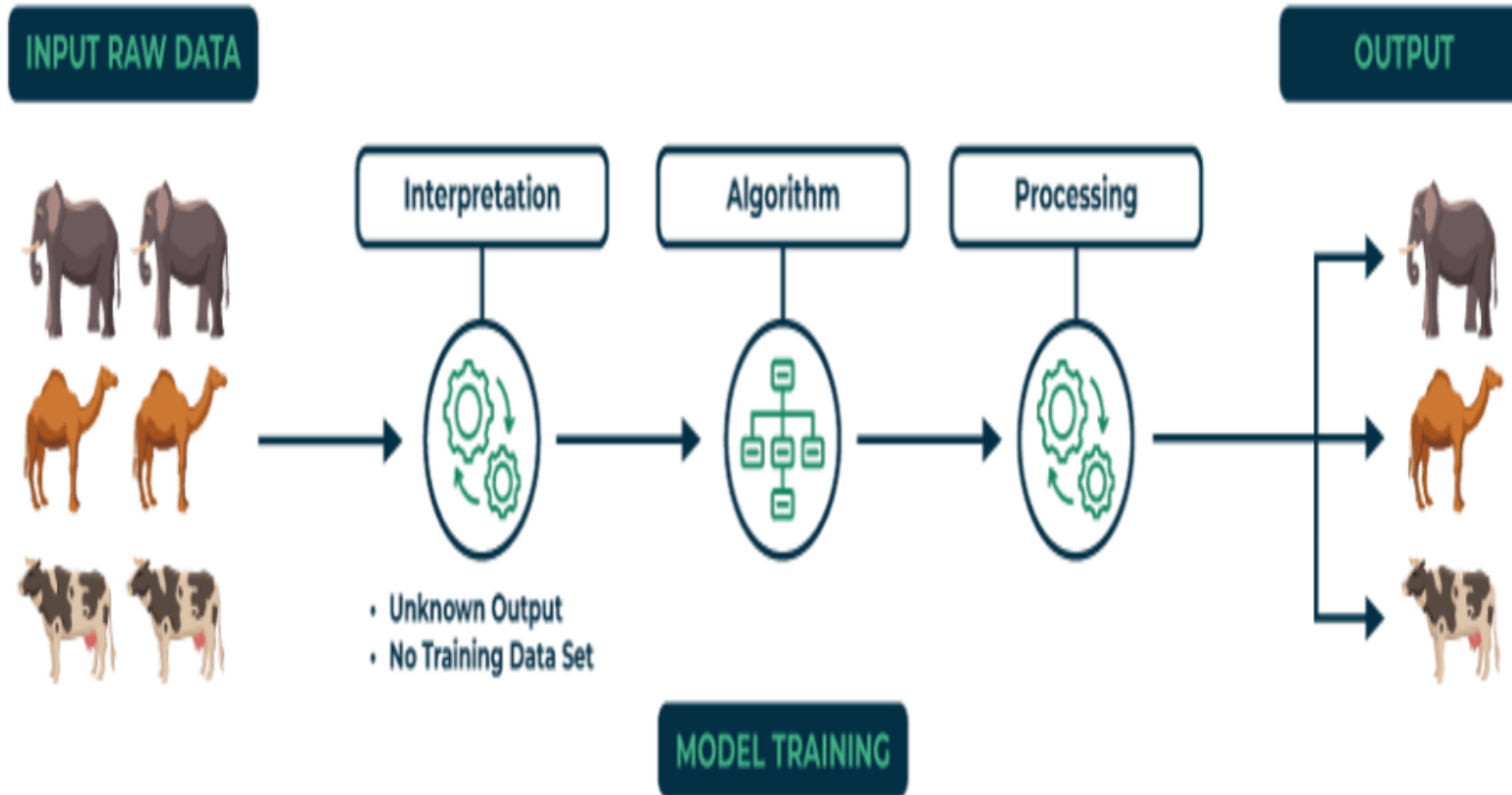
Supervised Learning

Supervised Learning

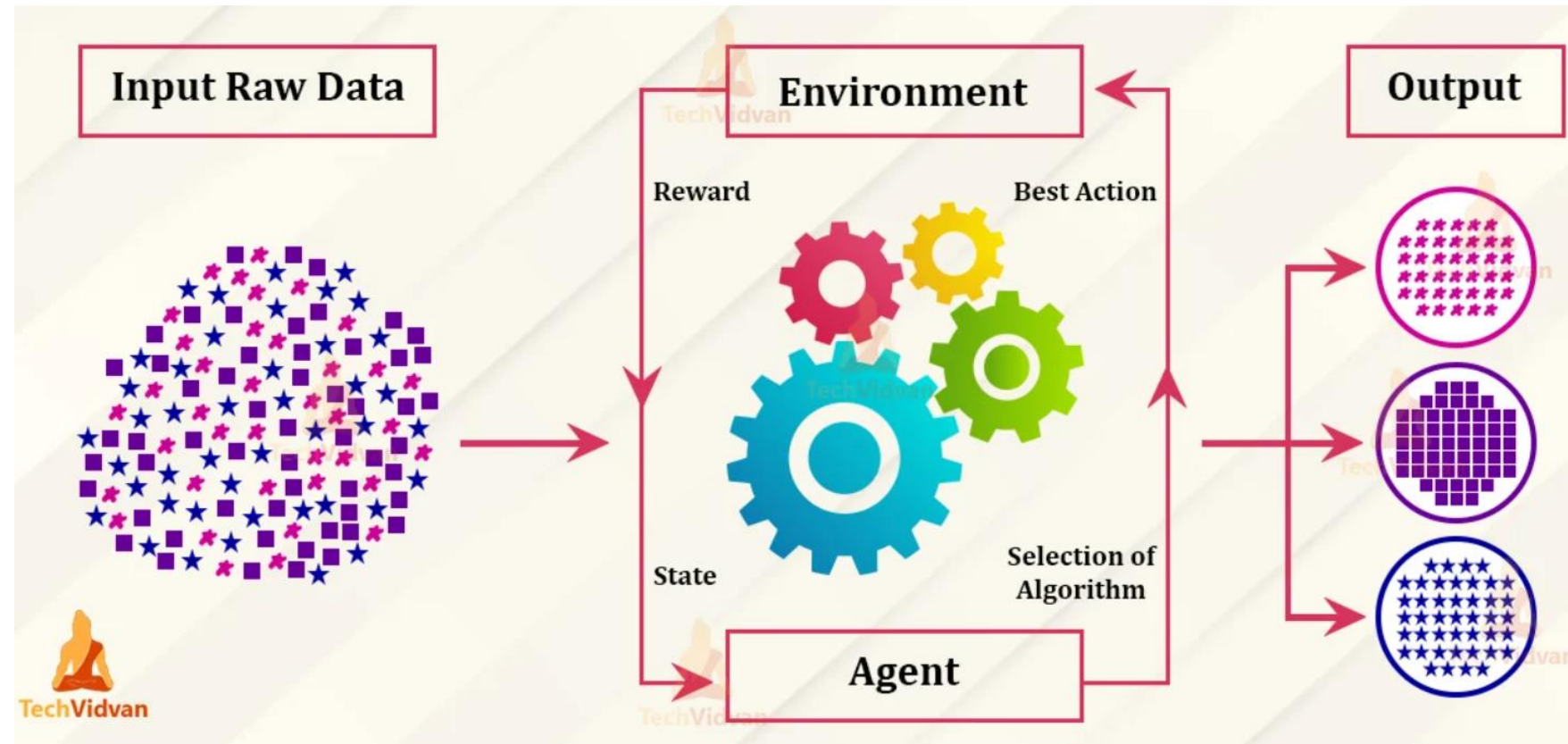


Unsupervised Learning

Unsupervised Learning

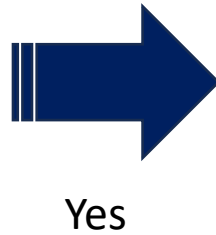


Reinforcement Learning

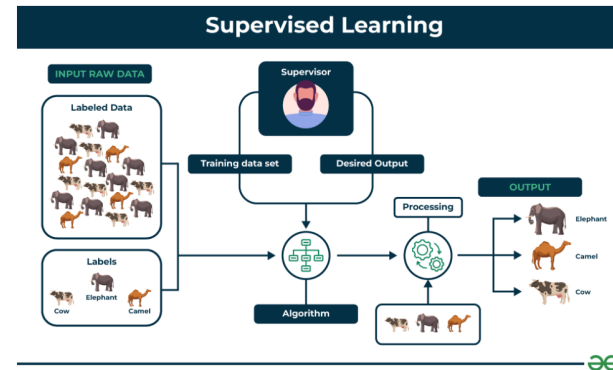


How to define the problem as a supervised, unsupervised, or reinforcement learning task

Do you have labeled data with known outputs or target values?

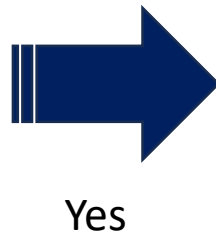


Yes

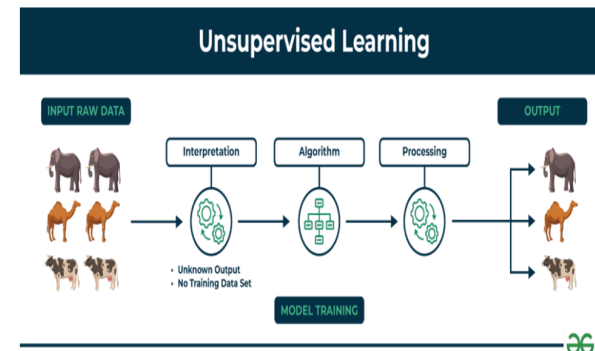


No

Are you trying to find patterns or structure in unlabeled data?

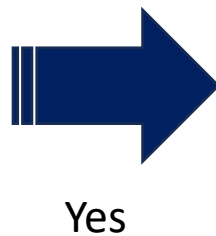


Yes

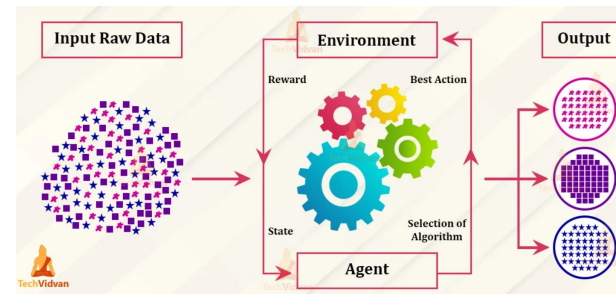


No

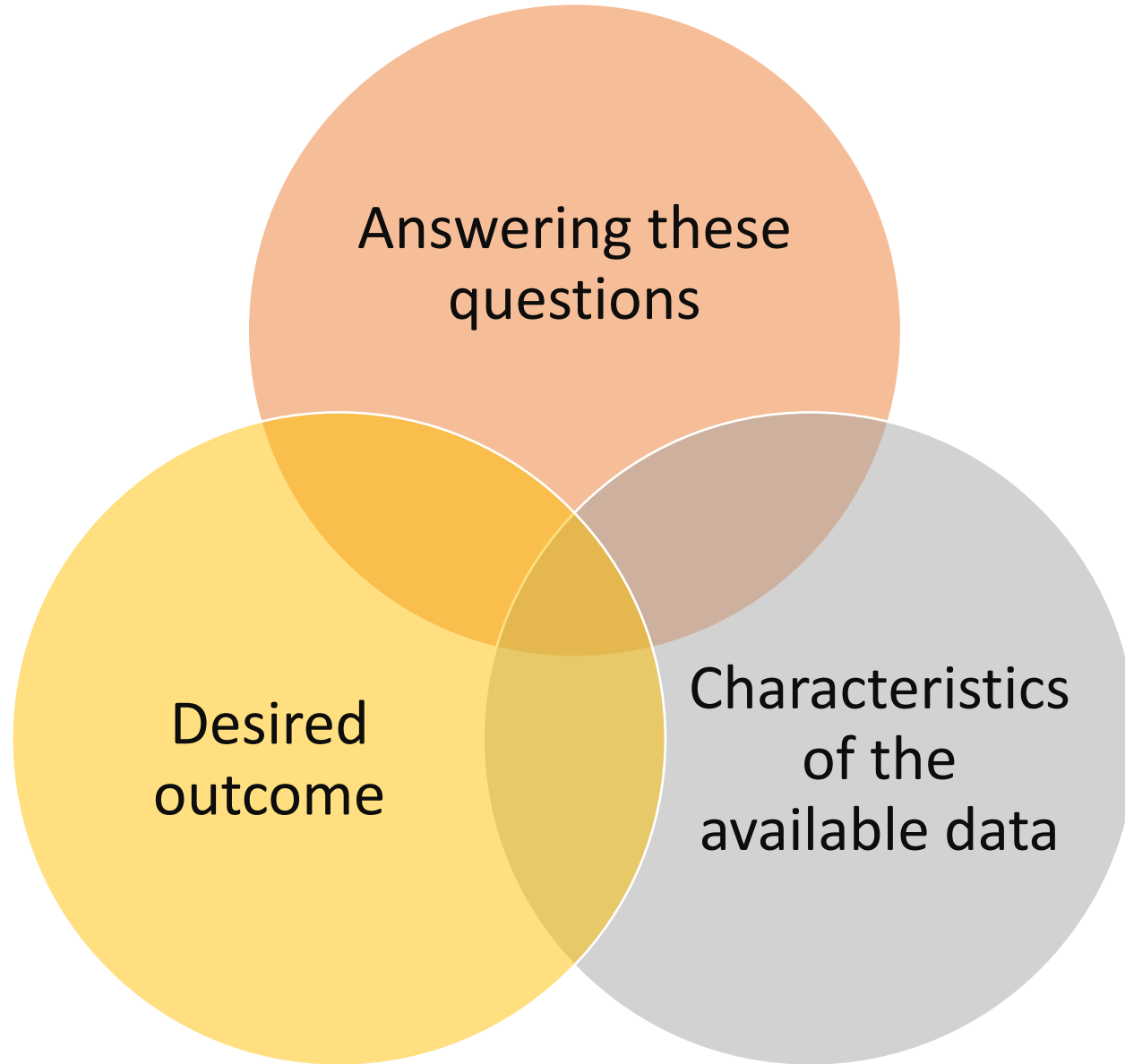
Does the learning agent interact with an environment and receive feedback in the form of rewards?



Yes



How to define the problem as a supervised, unsupervised, or reinforcement learning task



What is next?

How to determine type of output and evaluation metrics?

Understand the problem

Domain

Objectives

Constraints

Define the problem as a

Supervised

Unsupervised

Reinforcement learning task.

Determine

type of output
(e.g., classification,
regression,
clustering)

Evaluation metrics.



Master in Artificial Intelligence

*Thank
you*



Algorithm Selection & Development I

